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PROBLEMS AND ISSUES OF KNOWLEDGE PRODUCTION AND UTILIZATION IN EDUCATIONAL ADMINISTRATION.

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THE DEVELOPMENT ACTIVITY BETWEEN PRODUCTION AND UTILIZATION OF KNOWLEDGE IS EMPHASIZED AS THE KEY ACTIVITY. THE FEDERAL GOVERNMENT IN THE MID-1950'S BECAME ONE OF THE MOST VIGOROUS AND HOPEFUL PROTAGONISTS OF EDUCATIONAL RESEARCH AND DEVELOPMENT. THE ACTS PASSED AND THE RESEARCH AND DEVELOPMENT CENTERS CREATED ARE NOTED AS AGENTS IN THIS NEW INTEREST IN DEVELOPMENT. THE INQUIRY PHASE OF RESEARCH AND DEVELOPMENT IS DISCUSSED IN THE CONTEXT OF INCREASING ITS QUANTITY AND QUALITY. THE INQUIRY AND DEVELOPMENT PHASES ARE FURTHER RELATED TO THEIR FUNCTIONS IN EDUCATIONAL ADMINISTRATION. AT THE INQUIRY STAGE, IT IS SUGGESTED THAT RESEARCH CENTERS BE ESTABLISHED AT VARIOUS POINTS THROUGHOUT THE COUNTRY FOR TRAINING RESEARCHERS AND CONDUCTING RESEARCH. AT THE DEVELOPMENT STAGE, IT IS SUGGESTED THAT SPECIALIZED DEVELOPMENT UNITS FOR EDUCATIONAL ADMINISTRATION BE CREATED WHICH COVER THREE MAIN AREAS--(1) DEVELOPMENT OF CURRICULA FOR THE PREPARATION OF ADMINISTRATORS, (2) DEVELOPMENT OF ORGANIZATIONAL FORMS OR STRUCTURES FOR EDUCATIONAL SYSTEMS THAT ARE LIKELY TO MAKE A DIFFERENCE IN THE WAY THE SYSTEMS CARRY OUT THEIR TASKS, AND (3) DEVELOPMENT OF ADMINISTRATIVE PROCESSES AND PROCEDURES. THIS PAPER WAS PREPARED FOR PRESENTATION AT THE UCEA CAREER DEVELOPMENT SEMINAR, CO-SPONSORED BY THE UNIVERSITY COUNCIL FOR EDUCATIONAL ADMINISTRATION AND THE UNIVERSITY OF OREGON (17TH, PORTLAND, OREGON, OCTOBER 22-25, 1967). (HW)

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PROBLEMS AND ISSUES OF KNOWLEDGE PRODUCTION AND UTILIZATION IN EDUCATIONAL ADMINISTRATION

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Knowledge Production and Utilization:
Role Emergence and Reorganization

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The very juxtaposition of the terms, production and utilization, signifies that the central issue is that improvement of the relationship between the two be improved. The central problem is how to improve the relationship. These two propositions hold however we define knowledge, production, or utilization. They hold also whether we focus on education, on administration, or on educational administration.

What we mean by new knowledge requires clarification. Do we mean only the product of rigorous scientific inquiry, including humanistic, historical, and literary scholarship? Or, do we mean also the full range of innovative ideas that are untested and unevaluated? If we restrict ourselves to the narrower definition, we would deal literally with the relationship between <u>research</u> and practice. If we employ a broader definition, we would deal as well with the larger question of the openness of education to <u>change</u> in practice, irrespective of the demonstrated validity of <u>improvement</u> of practice attributed to or claimed for the change.

One way to encompass educational inventiveness with the product of inquiry is to treat them both as domains of hypotheses that require rigorous testing for their claimed contribution to improved practice. The products of educational inventiveness and of rigorous inquiry tend to share at least three elements in common. First, they appear in undeveloped state. Second, they appear in forms which are not fully understood by and acceptable to potential users. Third, they seldom include specific provision for preparing or training the potential user to use the product wisely and well. These three elements constitute essential links in the relationship of the production and utilization of knowledge, narrowly or broadly conceived.

Recognition of the linkage problem is long standing. Students of the adoption and diffusion processes have offered over the years a number of hypotheses and findings about factors that influence the introduction and spread of innovations in educational institutions. Their essays and studies treat a wide range of independent variables. Only a few observers, however, have asked whether essential elements may have been missing. Most have restricted themselves to analysis of variability in factors which have been present. The question of what is missing in the total process of converting knowledge into practice has turned attention to the potential power of educational research and development as a collective concept and enterprise.

EDUCATIONAL DEVELOPMENT

The concept of development as an activity of great magnitude and great consequence has taken root slowly in education. There exists a relatively shallow and narrow base of tradition on which to build in attempts to invoke the concept and to give it body.

Examples of near fit include features of the major curriculum programs in the sciences and in mathematics that blossomed in the late 1950's and of scattered efforts in the field of structural innovation, such as the Flexible Scheduling Project at Stanford University. These examples share in common the goal of making educational ideas and inventions work. The developers in each instance assumed the responsibility for carrying their ideas to the drawing board to create specific materials and processes, taking them from the drawing board to the field for tryout, returning to the drawing board with the results of their field testing, returning to the field with more refined materials and processes, again and again. This iterative process both characterizes and constitutes an essential feature of developmental work.

In addition, these examples share in common the creation of multi-disciplinary teams, who contributed over time and in concert the power of their expertise to the development of the new materials

and processes. They also attempted systematic assessment of the intended effect of the new materials and the new processes, in process and summatively.

Carefully designed and executed iterative work distinguishes rigorous developmental effort from the act of "selling" new materials and new processes to schools before they are appropriately field tested and before they are installed in pilot schools for additional reality testing and feedback. Educational development is a slow, demanding, exacting and extremely expensive process. It requires a multi-disciplinary assembly of talent, properly rewarded for devoting itself to this slow and demanding activity. It, therefore, must find a home and a base that will provide the climate, the tools, and the rewards necessary to sustain the effort.

The financial support and the hospitable climate for development in education has been marked more by their absence than their presence. The conventional curriculum--building exercises of local and State school systems, and the conventional preparation of texts and materials hardly qualify as development work of significance when placed along side of the efforts of the Physical Sciences Study Committee or the School Mathematics Study Group.

Since educators have never really understood the importance of educational development in converting knowledge into practice and since they have never really appreciated its complexity and sophistication, they have never really supported it enthusiastically, either outside or inside of the institutions that have conventionally housed the educational enterprise.

As a result, the state of the art of educational development is low. Yet, it is hypothesized that the relationship between the production and utilization of new knowledge in education will be materially strengthened only when educational development emerges as a well supported and highly rewarded domain of activity. At this point,in time, however, it is still a hypothesis rather than demonstrated fact that educational development is the keystone in the relationship. Rival hypotheses need to be constructed and tested before one draws too strong an inference from scanty data about the power of development as an explanatory variable. The connection between production and utilization is complex and requires analysis of a style and character in keeping with the territory. More than likely, multivariate type analysis is needed to help explain and to understand the relative contribution of several factors in improving the relationship. Probably no one factor can explain enough of the variance in enough cases to permit a single, simple-minded inference.

Nevertheless, observation of what has occurred in instances where serious, sophisticated, and extensive developmental work characterized the introduction of a tested innovation strongly suggests that educational development is a necessary, if not sufficient, condition to improving the relationship between the production and utilization of new knowledge. The relative rates and scope in the adoption and diffusion of the "new" mathematics and science, as compared to other content and structural innovation, represent cases in point.

As an activity in its own right, development can build both on a base of educational inventiveness, or hunches, and on the foundations of earlier, rigorous inquiry or scholarship. This inventiveness, these hunches, and imaginative ideas also constitute part of the storehouse of knowledge, broadly defined. Even so, research capital and competence, narrowly defined, constitute essential pillars on which to rest a dominant portion of serious developmental work. It is in this sense that the notion of educational research and development, collectively considered, is likely to emerge most powerfully, assuming that the developments appear in forms that are understood by and acceptable to intended users and that the users are specifically trained to use the developments wisely and well.

THE FEDERAL INTEREST IN RESEARCH AND DEVELOPMENT

One of the most vigorous and hopeful protagonists of educational research and development, in its connected denotation, is the federal government. The growth of its interest represents a crucial factor in any current examination of the relationship between the production and utilization of new knowledge in education and in the administration of education.

The birth of the new interest occurred in the mid-1950's. Signal events included the National Science Foundation investments in building new curriculums in mathematics and science, the National Defense Education Act provisions to support programs in guidance and foreign languages. The bulk of the federal investment went to the support of education as an instrument of national policy in international affairs. The public rationale behind the new programs rested heavily on the importance of our educational system in the maintenance and enhancement of our international posture. However, the soil was turned and the seeds were sown for expansion of domestic investments when the climate turned favorably. This turn of climate came with the convergence of the dreams of the New Frontier and Great Society and the demands of the Civil Rights Revolution. Both of these influences focused attention on the domestic scene; both called for the use of education as an instrument to pursue a wide array of national goals.

The Cooperative Research Act also appeared in the mid 1950's. It provided an unparalleled impetus to the support of research in education in universities, and especially in schools of education, across the land. In addition, private corporations invested heavily in education in the decade from 1956 through 1965, with more emphasis on encouraging educational inventiveness and educational innovation than research per se. These investments in inventiveness and innovation, coupled with the work sponsored by the National Science Foundation and NDEA, fed on and contributed to an acceptance of change in education. Innovation was "in."

Innovation in education was not, however, a hallmark or outcome of research projects sponsored by the Cooperative Research Act. It is not surprising, therefore, that someone should ask, after some ten years, "What has the $100,000,000 Cooperative Research Act 'library' contributed to change in and improvement of educational practice?"

This question helps to explain the current posture of the federal government with respect to educational research and development, in the connected sense. Without raising publicly any serious questions about the quantity and quality of work supported by the Cooperative Research Act, federal policy makers and program managers turned to the question of the relevance and applicability of the investigations

to educational practice. Once this question assumes priority, quality takes second place to relevance. Contribution to knowledge, per se, is less important than the contribution to improving educational practice and solving educational problems of national significance.

R and D Centers

The establishment of the research and development center program in 1964 marked a major leap by the federal government in support of problem oriented educational research and development, deliberately connected. The decision to start this program clearly signalled intention to seek another alternative, in addition to project research conducted by individual investigators and small teams, for systematic attack on and resolution of educational problems of national significance, as a critical element in devising and applying solutions, with "research" funds. The program also took a calculated risk in placing heavy responsibility for development in university settings, where the reward system has traditionally placed highest value on the production of knowledge without reference to its applicability.

Establishment of the research and development centers in a limited number of universities prompted expressions of concern among some members of the research fraternity who viewed the center program as

a competitor for scarce resources. Still, the program went forward on the grounds that it was necessary to stimulate systematically the pursuit of research and the development of new alternatives, based on research, that would contribute to the solution of critical educational problems and the improvement of educational practice.

ESEA of 1965

Hard on the heels of the establishment of research and development centers came the passage of the Elementary and Secondary Education Act of 1965. The ESEA of 1965 contains a vast range of aspirations and intentions. Its several titles were categorical, but as a total bill, it contained provision for strengthening education at many levels, in many institutional settings, and along many routes, including the training of personnel.

Titles I, III, IV particularly bear on the problem of how to improve the relationship between the production and utilization of knowledge in education. Title I and Title III claim the lion's share of ESEA funds. Together they present a heavy demand on the capital of research and educational inventiveness. The demand appears to have exceeded the supply and to have revealed that existing capital needs much additional processing before it can be used.

Title I addresses itself primarily to the alleviation of educational deprivation. It assumes that increasing and improving educational and related services to children who live in pockets of poverty will make a difference in their educational progress. It assumes, also, that sufficient knowledge had been produced and that sufficient developmental effort had been expended to permit the immediate installation of educational services that would make a difference. Time will tell whether Title I will achieve the results that its architects intended. Even now, however, there is reason to believe that provision for significant and time-consuming development efforts might have generated more powerful educational inventions. The expectation of immediate results made it difficult to undertake needed developmental work, rigorous field testing, and appropriate and specific training of educational personnel to use new materials and new procedures in major programs of compensatory education.

Title III presents a somewhat similar picture. Originally, Title III envisioned a vast array of supplementary education centers and exemplary educational programs, to serve as the cutting edge for improving education at the local level. It assumed that the supplementary components and exemplars were sufficiently well known and identified to allow immediate incorporation into school systems and to permit immediate display for others to emulate.

Experience suggests that the storehouse of immediately exportable and utilizable supplements and exemplars was not as rich as originally believed. Thus, a number of Title III projects were forced toward the boundaries of educational development. The need to turn in this direction rather than to draw from a rich treasure of demonstrated educational developments speaks eloquently, if not favorably, of the state of educational research and development.

Title IV amended and extended the Cooperative Research Act. It authorizes educational research and related activities, including development, demonstration, dissemination, and training. It is in Title IV, particularly, that one meets head-on the policy and managerial considerations that affect the production of new knowledge, the utilization of new knowledge, and their relationship.

Title IV itself does not specify the proportion of funds to go to the various purposes for which the Title exists. As an extension of the Cooperative Research Act, it provides for continuation of support for project research by individual investigators. On the other hand, as the umbrella for research and development centers, it also provides support for programmatic research and development in education. In addition, its legislative history reveals that Title IV also provides the conceptual and the fiscal foundations for a new institution, the regional educational laboratory.

Together, the research and development centers and the regional educational laboratories represent deliberate creation of instrumentalities to pursue educational research and development aimed at problem solving and improvement of practice. They constitute a new apparatus for producing and utilizing new knowledge in education. As new instrumentalities, the centers and laboratories also represent alternatives to the project research route. They do not, however, exhaust all possible routes for the production and utilization of new knowledge, considered separately or collectively. The breadth of the Title IV's authorization permits policy makers and program managers to keep open the range of alternatives which are or may become available. Still, the centers and the laboratories do comprise a large existing network addressed specifically to the relationship between the production and utilization of new knowledge in education. And, integral to both sets of institutions is the centrality of educational development as a major activity.

Inquiry and Development

As to the inquiry phase of research and development, there is general agreement that both quantity and quality should be increased. There is no real issue here, except to find ways and means to accelerate the pace of improvement. The problem is how to do so.

Who really supported research in and on education before the period of enlarged federal investment is not well documented. In any case, since the passage of the Cooperative Research Act, the fate and destiny of the production of new knowledge in education has become inextricably wedded to the policies and actions of the federal government with respect to the support of rigorous inquiry and sophisticated scholarship. It is not surprising, therefore, that the issue, as seen by the educational research fraternity, is that the federal government should support research in education more strongly and more abundantly. The more successfully the fraternity pursues the issue, the more dependent will be the inquirers on federal policy and its execution; and the more interested they will become in continuing their efforts to influence federal policy. The problem is how to create an argument that appeals to policy makers and program managers who participate in allocating public funds. How powerful a case can be made for inquiry for its own sake? What priority should exist for supporting inquiry qua inquiry as compared to programs which aspire to or promise direct application or utilization of knowledge?

It is instructive to note, on this score, that the standards of productivity applied by institutions which house the inquirers, and by their peer groups, do not square with the standards of productivity applied by policy makers and program managers. In the

former instance, the relevant question tends to be, "How good is the research?" In the latter instance, the relevant question tends to be, "What difference does (or can) it make?"

The scholarly inquirer may show great impatience, even disdain, in the face of the latter question. He may consider it irrelevant. And, indeed, it may be irrelevant to the institution which employs him and to the company of equals who constitute his reference group. However, the question is not irrelevant to the fraternity of inquirers as a total fraternity. The more evidence of difference that <u>some</u> (not all) inquiry makes, the more likely that there will be enthusiasm for support of inquiry for its own sake. Few policy makers and executives really expect <u>all</u> inquiry to pay off in difference in practice. But they do expect that <u>some</u> inquiry will pay off. As they see evidence of benefit, they tend to become more enthusiastic in their support.

Given the benefits orientation of public policy makers and program managers, it appears essential to demonstrate that some (not all) inquiry can and does contribute to the improvement of practice, that inquiry does make a difference. It appears essential to turn the attention of some inquirers (not all) to inquiry that is oriented to problem solving, that is designed specifically to contribute to improvement in practice. Some inquirers are already so oriented; some are not. Some are some of the time, but not all the time. And some apparently can be attracted to problem-solving, at least some of the time.

Here, again, development as an activity promises to contribute significantly. Development is an openly benefits-oriented activity. But, development also creates a voracious demand for research output, as well as educational inventiveness. Heavy investment in educational development, ~~then~~ augurs well not only for improving the relationship between the production and the utilization of knowledge, but also for increasing the base of demand on and for inquiry qua inquiry.

The interest and support of the educational research fraternity in development as a valued activity should be clear. Its benefits orientation, its dependence on and consuming appetite for the fruits of inquiry qua inquiry, and its critical connection to the domain of utilization all combine to make development an extremely important enterprise for the educational researcher. The stronger the conjunction in research and development, the more powerful will become the combined concept, and the more probability of enthusiasm on the part of public policy makers for each part of the concept as well as the combination.

INQUIRY IN EDUCATIONAL ADMINISTRATION

Research in educational administration received strong stimulation from the Cooperative Program in Educational Administration, supported by the Kellogg Foundation. The Cooperative Research Program of the U.S. Office of Education, other public resources, especially in major state universities, and private foundations have continued the initial stimulation.

These stimuli prompted an accelerating shift from the normative to the theoretical and empirical analysis of administrator, and more recently of organizational, behavior in education. Also, students of the economics and politics of education turned with vigor to the conceptual and methodological tools of relevant social sciences.

In spite of the growth of much interest, and some competence, in research in educational administration over the last 15 years, it seems that educational administration remains more a site for inquiry than a well-developed field of inquiry. If continuing observations confirm this view, a question of the first order is whether additional alternatives for improving inquiry in and on educational administration deserve further exploration.

Current alternatives for improving research in the field include: first, attempts to raise the level of preparation for inquiry of

students enrolled in educational administration programs; second, attempts to secure and maintain the active participation of investigators trained as behavioral or social scientists; third, attempts to combine the first and second alternatives. A decade or so of efforts devoted to the first alternative has produced a small increment in the research capital in educational administration beyond a low hill of doctoral dissertations and an even smaller mound of publications based on these dissertations. Available evidence suggests that a severe discontinuity enters into the career history of the dominant majority of students of educational administration between completion of their dissertations and their ascendancy in the academic ladder to the professorship. This observation does not hold for all professors of educational administration, but even at the most prestigeful UCEA institutions, it characterizes the mode of behavior. In sum, remarkably few professors of educational administration, whatever their preparation, conduct and publish their own research.

The record of investigations by researchers trained as behavioral and social scientists is better. Most of the major contributions have come from them, except perhaps in the special field of educational finance. Compared to the output of scientists trained

in relevant disciplines, attempts to increase the production of new knowledge in educational administration by way of improving the competence for inquiry of students in educational administration programs look puny.

Perhaps not enough time has elapsed to make firm judgments about the long-range power of new preparation programs that stress inquiry training and scholarly productivity. It may be that another generation of student output will demonstrate completion of the transfer from the normative to the scientific orientation of educational administration. It may also be that more rigorous application of university reward and value systems to professors of educational administration will accelerate the pace of the transition.

Existing data do, however, prompt the question of whether a department of educational administration (or its equivalent), conventionally located in a university school of education, constitutes the most promising base for encouraging inquiry in educational administration or for preparing researchers in the field. To date, the conventional structure has not produced sufficiently to warrant great confidence in its ability to meet these tasks.

The experience of the Kellogg years led to several noteworthy efforts to depart from the conventional structure, including the School Executive Studies program at Harvard, the Midwest Administration Center at Chicago, and most recently, the Center for Advanced

Study in Educational Administration at Oregon. UCEA also grew out of the Kellogg stimulation to educational administration, but more on this score later. The Institute for Administrative Research at Teachers College represents another structural variation, but one that sprang from a base separate from the Kellogg investment. Collectively, the record of these institutions offers evidence that a new structural design may contribute powerfully to improving the production of new knowledge in educational administration.

Suppose one were interested in creating a new institution whose primary goal would be to increase the quality and quantity of new knowledge in educational administration. Where should it be located? How should it be staffed?

Given the goal, a major university would provide the most compatible setting. Given the major domains of inquiry--the politics and economics of education and relevant extra-organizational and intra-organizational variables--the core of investigators would come from a background of training in relevant disciplines rather than from a background of training in educational administration. To provide continuous contact with and entry to the field, however, it would be desirable to include a cadre of investigators who came out of preparation programs in educational administration, but programs laced with

substantial study and use of the concepts and tools of the behavioral and social sciences.

A mix of these types of investigators would probably prefer to work in an organization set up separately from a school or department of education. And they probably would prefer to think in terms of long-term rather than permanent association. The organization would then provide permanent posts, but not permanent incumbents. The principle of selectively structured turn-over would prevail.

There is probably need for no more than five to ten such centers or institutes across the nation. Partly this is so because of the realities of optimal staffing. Partly it is so because educational administration, as a site of inquiry at this point in time, needs no more than five to ten major centers addressing themselves to the territory on a continuing basis of the highest quality.

This suggestion for a new design smacks of a return to the CPEA model of a few, major regional centers spread across the nation. To say so openly is not to apologize. It is to advocate the position that the CPEA pattern provided a thrust for inquiry in educational administration which was unparalleled prior to its creation and which has not really been matched since. This is not to say that the CPEA structure was perfect and that it could not be improved or strengthened. Associated with the proposed centers of inquiry should be a network of units or arms that would concentrate specifically on developmental work in educational administration. Movement of personnel from the centers of inquiry to

the units of development should be open and easy. Each developmental unit should be closely connected to all of the inquiry centers rather than to just one center. The development units would be avowedly problem- and benefits-oriented. They would create insistent and consistent demand for problem-oriented inquiry, which would command the attention of some of the investigators at the research centers on the basis of interest and competence. Their mission orientation, rather than their research orientation, would cast the development units more in the mold of the new regional educational laboratories than in the mold of traditional university patterns. Some of the development units might be organizationally united with some of the research centers, but there would be no need for all of them to be so organized, nor for all of the research centers to create their own developmental arms.

Perhaps the most controversial feature of the proposed design, however, is advocacy for reducing to 20 or 25 the number of institutions in the nation that prepare educational administrators and for urging them to concentrate unabashedly on preparation for practice rather than mixing preparation for practice with preparation for inquiry. If for no other reason, this suggestion deserves consideration because it would permit experiments in training with larger classes of full-time students that might generate conclusions on what makes a difference in training.

The way things stand now, with programs scattered over hundreds of institutions, with students coming and going at all hours and at all times, no one will ever really be able to say very much about what makes a difference in training or why.

From these fewer, larger, and more adequately staffed centers of preparation appropriately endowed and interested graduates could go on to the research centers or development units for additional preparation for specialized roles in the field of educational administration.

The time is ripe to join again the issue that UCEA originally presented to the educational administration fraternity. The new Educational Professions Development Act may provide an appropriate opportunity to do so. In any case, the current status of inquiry in educational administration, as well as the current status of preparation programs for researchers and practitioners, demands examination and creation of new alternatives to move the field forward. In addition to the pieces of structural apparatus proposed above, two others appear desirable. The first is creation, first advanced by Albright, of three or four equivalents to the staff and command schools maintained by the military. This type of institution promises to be uniquely suited to the needs of educational administrators in mid-career, who have used

up the capital of their original preparation and who are moving into positions of increased responsibility and scope. The second is creation of one or two extension-type centers in each State, or in regions if population is scarce, to serve as outlets for bringing new ideas on a continuing basis to practicing administrators in the field. The staff and command school equivalent might well be associated with a research center piece of the total apparatus. The extension center equivalent might be sponsored by administrator's associations or one of the teaching institutions.

If these pieces of apparatus remain scattered and structurally disconnected, there is probably no more hope in the proposal than there exists in current arrangements. Consequently, a great effort needs to be addressed to establishing a real network in which and to which all of the separate pieces contribute in a specialized yet highly cumulative fashion. The one previous effort to achieve a goal of this consequence proved to be abortive; yet, it carried the field forward. The old issues need to be reopened, and the new issues faced, to permit the next step to be taken.

THE DEVELOPMENTAL COMPONENT IN EDUCATIONAL ADMINISTRATION

Reliance on conventional and traditional approaches characterize the majority of efforts to connect the production and utilization of knowledge in educational administration. Classroom instruction by professors dominates the scene, supplemented by workshops, consultation, surveys, text writing, and journal publication. Serious and continuous developmental efforts of consequence are vitually non-existent, except perhaps in the specialized field of educational finance. As in education generally, so in educational administration, it is not enough to explore ways and means to improve the quality and quantity of inquiry. There is need also to discover how to strengthen the totality of research and development, in both their separate and connected senses.

Earlier reference to the desirability of creating specialized development units for educational administration reflected this central thesis. There are several major spheres of developmental work that come to mind as immediately feasible. The first is the development of curriculums for the preparation of administrators; the second is the development of organizational forms or structures for educational systems that are likely to make a difference in the way the systems carry out their tasks; the third is the development of administrative processes and procedures.

UCEA has represented a major force in curriculum development for preparation programs for educational administrators, in its own headquarters and in its member universities. Still, curriculum development in educational administration today looks very much like the conventional local school system approach. It is disparate, fragmented, uneven, scattered, and mainly non-cumulative. Nor can anyone really say much about what difference it has made. Certainly there is evidence of more use of behavioral and social science concepts and research findings in educational administration courses and workshops. However, there is preciously little evidence available about the impact on practice of the increased turn of educational administration to the social and behavioral sciences over the last 15 years.

Good point!

A singular exception to the prevailing pattern shows itself in the UCEA sponsored work on the Jefferson School District simulation and associated in-basket materials and, more recently, on computer-aided instruction. The contributions to date of the UCEA sponsored efforts prompt consideration of expanding this type of work on a massive co-ordinated scale of the order undertaken by PSSC, SMSG, and BSCS. One way to mount such a development program in curriculum would be to assemble in one place for as long as a year just one

professor on leave from each UCEA institution for the sole purpose of building at least two or three alternative curriculums for the preparation of educational administrators. Clearly, it would be desirable to mix into the team a substantial core of specialists from relevant behavioral and social sciences and another core of practitioners who are intimately familiar with the field. And it would be desirable to provide continuity in the developmental work through assignment of some staff on a long-term basis and opportunity for others to return regularly for summer sessions or equivalent blocks of time.

The goal of an effort of this magnitude would be to prepare complete instructional systems, including specifications for entire programs, content and materials, teaching procedures, and provision for training instructors specifically to use the new materials and procedures. The building blocks for a sizable chunk of this effort already exist, but they are scattered in bits and pieces over a wide landscape. Their assembly, and cogent additions to them, into several alternative instructional systems constitute a next order of business. It would be especially valuable if these instructional systems were truly field tested before advocacy of adoption in raw

form. It would be all the more powerful if there were only a relatively few preparation institutions into which the instructional systems required installation so that something definitively useful could be said about the effects of administrator education and training.

With respect to new structural and organizational forms, it would be equally desirable to move from the posture of advocacy to the posture of creating, testing, and installing them in ways that are likely to demonstrate credible differences. The primitive stage of this type of activity already exists in the survey movement. Hardly a survey has ever been made that did not recommend one form or other of school or school system reorganization. The assumptions, convictions and beliefs on which these recommendations rest fall under the heading of conventional wisdom. Carefully designed and executed field test in pilot situations is not a hallmark of the recommendations of survey teams. Even more to the point, seldom have the survey recommendations themselves been treated as hypotheses, followed by careful data collection and observation to ascertain whether or not the intended outcomes were achieved.

Schools and school systems are complex formal organizations living in complex social, political, and economic environments. As total systems, or as sub-systems of larger systems, they represent extremely difficult places in which to introduce elements of new form or structure to field test as part of an iterative and long-term developmental effort. For this reason, if for no other, provision for pilot and demonstration schools and school systems, of representative types, would need to be closely associated with the developmental units recommended earlier. The ability of the Flexible Scheduling Project at Stanford and the IDEA network out of UCLA to create such arrangements reveals that schools can be recruited for long-range developmental involvement. The various school study councils spread across the nation may also constitute fertile soil for similar involvement.

In addition, given the general difficulty of securing access to school systems for development work of a structural character, continued effort should be addressed to constructing simulated models which will permit approximate testing of the effects of structural changes. These models will probably always fall short of the real thing, but they do offer great utility for "de-bugging" the crucial fine points that can make or break a serious development effort.

The domain of administrative processes and procedures also stands ready for major developmental attack. Decision-making, for example, has commanded attention for years as a crucial slice of administrator behavior. Several significant projects in computer-assisted simulation models have already appeared in prototypic form in other fields. These models may not fit educational administration, but they deserve careful examination as a potential base on which to build.

Beyond the simulation stage lies the opportunity to develop specific programs which provide both for training school executives in various styles of decision-making deemed appropriate to varying sets of conditions and structural form and also for testing these styles in action. As things stand now, training for improved decision-making consists primarily of didactic encounters, sometimes supplemented by participation in in-basket exercises. Computer assisted simulation may move training one notch higher in the scale of reality. Properly constructed and supervised internship, encompassing reality and authenticity (themselves uncommon), may raise the level even higher. However, appropriately constructed and executed field testing of several models of decision-making in the real world of educational administration appears essential to further advance in decision-making as an administrative skill.

CONCLUSION

Emphasis on the importance of development as an activity of great consequence in no way deprecates the importance of other building blocks in the relationship between the production and utilization of knowledge. These other blocks, such as credible demonstration and sophisticated dissemination, constitute critical elements in the total set that makes for sufficiency in promoting and improving the relationship. The burden of the argument here is that development is the keystone. When it achieves a higher status as a rewarded and valued activity, the central issue will be joined squarely and the central problem will be moved closer to solution.